

## **ABSTRACT**

A new effective and fast method and apparatus for still image compression implements an embedded progressive sorting scheme in a quadtree-like structure. In contrast to zerotree-based methods for wavelet coding, the invented embedded quadtree wavelet (EQW) method exploits the inherent spatial self-similarity within individual layers of the multiresolution decomposition hierarchy. This self-similarity offers higher predictability of the data within the same resolution level, and therefore usually provides a higher performance in seeking a compact code. The computation involved in the EQW method is more efficient than in the zerotree wavelet coding, and the produced bitstream is more robust to channel noise. The present invention can effectively be used for object-oriented shape coding or region coding in image and video compression coding systems.